

**TALK OF STAKEHOLDERS, TALK OF PLAYERS : GOFFMAN'S CONTRIBUTION TO THE USE OF A  
ROLE-PLAYING GAME AS A SOCIAL INVESTIGATION TOOL.**

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Role-playing games (RPG) are increasingly used to support negotiation processes. As new ICT tools different experiments have shown their relevance to put stakeholders in situation of interaction. But play is not supposed to be reality, and the link between interactions in the game and those occurred in the real negotiation process must be clarified. A methodology has been created in order to describe and analyze the relationships between play and reality in such a context. This article is particularly focused on the contributions of Goffman's discourse analysis to tackle this issue. An analysis of a game session gives information on individual and collective elements guiding interactions of stakeholders. They are, afterwards, confronted with individual and collective information collected in reality.

*Key words*: role-playing game, Goffman, Bourdieu, ComMod, Senegal, discourse analysis

## **INTRODUCTION**

The joint use of computerized models called multi-agent system and role-playing games are increasing. In the ComMod group, researchers used them together in order to tackle complex and dynamic social systems sharing renewable resources (Bousquet et al., 2002). They have developed an original posture, called Companion Modelling approach<sup>3</sup>. This approach is a posture based on a cycling approach, in interaction with field processes, including discussion of assumptions and feedbacks on the field process. Confrontation between field and modelling processes has to be permanent because of openness and uncertainty features of these systems. This approach is used with two possible aims: learn on systems or support collective decision processes in these systems, which corresponds to an objective of increasing knowledge either for the scientist or the field actors, always through an interaction between them mediated by an evolutionary model.

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<sup>3</sup> <http://jasss.soc.surrey.ac.uk/6/2/1.html>

In our research we have followed one of these experiments. A role-playing game (RPG) was designed to open the black box of a multi-agent model and explain its contents to farmers of the irrigated systems of the Senegal River valley (Barreteau, Bousquet, & Attonaty, 2001). As the research progressed, the game was used with farmers as a support tool to make them

discuss about their difficulties to manage their resources. But, how this could happen if gaming is not linking with reality? In this case, rules and roles represented in the game are a schematization of real ones obtained with field interviews. So villagers played roles and rules they are faced to in reality. But the RPG is not exhaustive. It lets to them some degrees of freedom to interact during game sessions. With this closeness between play and reality, our main issue was to understand whether they will just following the rules and roles of the game or will they use their own knowledge of the reality to interact in the game? But even if play has been studied by anthropologists, sociologists, psychologists or economists, our researches have shown that there is no methodology knows to tackle this issue. We have developed one in order to determine whether there is a relationship between the role-playing of stakeholders and their social reality or not.

As we have already explained in a previous article (Daré & Barreteau, 2003), we have based our methodology to test three hypothesis :

- 1- the game is accepted by stakeholders as a schematic representation of their reality
- 2- the social background of stakeholders interferes with role-playing in the game
- 3- the game reveals relationships between players

As we try to understand how reality interferes in the game, our methodology is based on complementary analyses of virtual and real negotiation processes. We have already shown that reality interferes in the game (Daré, 2004a). In this article we want to develop how Goffman's discourse analysis of people in situation of action was helpful to tackle these issues, specially the second and the third ones.

After introducing the context of the research, we focus on a crisis appeared in one game session. Talks of players interacting in the game are registered with a camcorder then translated into French. We use Goffman's discourse analysis to describe the "front" of players developed to solve the water management issue, the interactive behaviors, the dynamics of social roles regarding to the evolution of the game situation. Then, as an illustration of the relations between play and reality we analyze in a real passed conflict the behavior of a farmer particularly involved in the game session. Thanks to collective interviews and history life studies, we analyze the stakes and the interests of stakeholders involved in the conflict. In the third part, we put face to face information obtained in both context (reality and play). We show how the analysis of game sessions was helpful to reveal characters and relationships between stakeholders.

## **1. CONTEXT OF THE RESEARCH**

Irrigation in the Senegal River valley increased with the independence of Senegal in 1960 when the new state decided to use the incomes of agricultural productions to support its economic development. But in spite of heavy investment coming from international donors for its bigger part, yields and area cultivated did not reach the results hoped. After several programs of structural adjustment, Senegal had to liberalize the agricultural sector. The

functions of its rural management entity (SAED<sup>4</sup>) were transferred to others institutions or enterprises: hydraulic management was transferred to farmer organizations, financial management to the national bank of crop loans (CNCAS), and tenure management to rural communities. The remaining activities were placed in the hands of private enterprises (Crousse, Mathieu, & Seck, 1991). In few years, without really being prepared to that, farmers had to face with new stakeholders.

We have developed our analysis in a village of the middle valley of the Senegal River called Wuro-Madiu, located in Podor department. Our interviews from 2000 to 2003 have shown that the main difficulty they are confronted with is the repayment of collective loans to the bank. Farmers are organized in EIGs (Economic interest groupings) which coordinate their relations with bankers to obtain loans and private enterprises to pay agricultural inputs. In an EIG, all members are collectively responsible for the loans obtained. They are dependent upon each other. But because both of high costs of production in irrigated scheme and uncertainty in production, some farmers have developed risk-spreading strategies. They tend to allocate loans obtained for one plot in an EIG to others plots. By spreading so, the EIG plots can not reach the yield to reimburse all the debt to the bank. That is what happened for example in the village in 2001.

There, a companion modelling approach was realized to build first a computerized model called multi-agent system (MAS) and second a RPG. Initially the MAS “Shadoc” was designed to gain a clearer understanding of co-ordination patterns among farmers in irrigated systems and their consequences (Barreteau & Bousquet, 2000). The aim was to use simulation as a means to understand the sensitivity of a virtual irrigated system to various sets of rules. It was designed on the basis of field interviews and field observations in several villages of the middle valley, and discussions on the results of earlier versions with key local stakeholders. The second step was to explain the model content to farmers in the villages. The MAS was “translated” into a role-playing game called “Njoobaari ilnoowoo” by its first players. This “translation” involved simplification to make the game practically possible to play (Barreteau et al., 2001).

Njoobaari ilnoowoo creates problematic situation in a virtual irrigated system in which people are acting given parts. It is formed by fourth elements:

- the game comprises a system of specific rules and described the world where the session takes place. Space is divided into two areas: the first one representing irrigated scheme and the second, two villages separated by several kilometres apart. The two areas are hidden one from one another. In the irrigated area, players are organized in two EIGs, each one managing a watercourse of the irrigated scheme. In each EIG, players come from both villages. Every player cultivates rice in his own plot. A pumping station delivers the same water-flow to both watercourses. The allocation depends on the number of plot opened along a watercourse in the same time and their position. During each of the eight turns organized, players draw occasion cards which allow them to cultivate in the irrigated scheme area. The campaign stops at the end of the eighth turn. Players are paid for the crop harvested and then they can pay back their loan to their creditor (bank or individual).
- 10 to 15 players take part in the game. They follow rules given in the game. At the beginning of the session, they draw three cards at random. These cards written in Pulaar, Wolof<sup>5</sup> and French define their basic behavior during the session. Three

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<sup>4</sup> National society for the management and the exploitation of Senegal river valley and delta lands.

<sup>5</sup> two Senegalese languages.

parameters characterize each player: a social status (one out of four, that determines the possibilities of exchanging labor or credit), a plot production goal (one out of three, with an increasing level of intensification), and a loan repayment rule (one out of four).

- the animator organizes the session. He knows all the rules but because of degrees of freedom given to players' interactions, he does not know how the session will going on.

This three first component usually characterize a role-playing game (Mucchielli, 1983). But in our experiment, we add a fourth element which is the observers. They do not participate to the game but they register crucial data very important to analyze the session.

Now that the context of the research is described we will focused on the part of the methodology which used Goffman's discourse analysis. Then an application will be developed.

## **2. THE USE OF GOFFMAN'S DISCOURSE ANALYSIS TO STUDY A CRISIS IN THE PLAY**

### **2.1. Why Did We Use Goffman's Analysis To Tackle Our Problematic?**

We were looking for some elements to build up a methodology to analyze information collected in gaming sessions or in everyday life.

In everyday life, we decided to analyze practices of stakeholders engaged in real negotiation processes to solve difficulties occurred in their real irrigated system. We predicated our study upon Bourdieu's analysis of social system (Bourdieu, 1980; Daré, 2004a).

In gaming sessions, we based our analysis on Goffman's discourse analysis. In *The presentation of self in everyday life* (1959) E. Goffman employs a "dramaturgical approach" to describe the presentation of an actor and its meaning in the social context. Coming from the interactionist perspective of the Chicago School, he emphasizes a qualitative analysis of the component parts of the interactive process. He focuses on the details of individual identity, group relations, the impact of the environment, and the movement and interactive meaning of information. By thinking of the social relationships in a ritual or sacred way, he shows that belong to a social system demands to put on roles, to follow rules and to behave in life as some actors do. For E. Goffman, two principles ritual elements are essential to social interactions:

- the "**front**" described as "that part of the individual's performance which regularly functions in a general and fixed fashion to define the situation for those who observe the performance"(Goffman, 1973). The front allows for others to understand the individual on the basis of projected character traits that have normative meanings.
- the "**line**" defining in terms of ritualized symbolic action (Goffman, 1974). A front must be convincing - "in-line" with expectations. The actor transmits information via various channels. Such credibility manifested in verbal and non-verbal symbols used is won by satisfying the expected duties and manners of an attributed role and by being consistent in communication of activities and traits. An "idealised" front conforms to conventions,

mores and rules required by the audience. The aim is for the performance to be believed. Credibility is to establish intention and to verify the integrity and honesty of what is said or done and how it is said and performed.

Interaction process is predicated upon the mutual agreement of the “front” and the “line” of each. Interaction is viewed as a “performance”, shaped by environment and audience, constructed to provide others with “impressions” that are consonant with the desired goals of the actor. This agreement allows each actor to predict behaviors of others and to behave as they expect. In this way, each inter-actor could keep his front which is the most important in the interaction process (Goffman, 1987). But the equilibrium between front and lines may be precarious when a line is seen as dissent by the others. Usually the co-operation between members of a team to reach common goals reduces the possibility of dissent. “Therefore, my strategy in the interaction is to act and talk in order to make others expressed what I hope they will do.”

The first reason why we decided to support our methodology on Goffman was because actors in interaction are in the center of his analysis. And this is congruent with our study of RPG which attempts to better apprehend players’ behaviors in interaction during situation of game. During the sessions we particularly focused on negotiation between players. We continue our analysis in a broader area between game and reality: the debriefing. We organize a meeting just after the game where players can explain their decisions, actions or behavior in front of the others players. This debriefing helps us and the players to grasp information about the gaming session and gives sense to playing actions.

Secondly, we used Goffman’s discourse analysis to pass the limits of conversational analysis. All the verbal exchanges are done indeed in vernacular language. We registered interactions with a camcorder placed in the irrigated scheme area during the irrigation/production phase, and in the village during the two others steps of the game (loan reimbursement, appraisal of the season). Because the videos are transcribed and translated into French, we did not use conversational analysis<sup>6</sup>. Thus, by focusing either on player’s practices or verbal exchanges we wanted to make interactions understandable and reach some elements guiding players’ behaviors.

Thirdly, Goffman helps us to determine the exact context of players’ discourse production: the simulacrum or the reality. Our analysis attempts to define the “fronts” and “lines” of players engaged in interaction in order to improve the description of characters and confronted it with the roles given by the cards.

Therefore, in our analysis, interactions between protagonists result from the dynamic of “fronts”, their consistency with the “lines” of each one and their mutual acceptance by the others players interacting.

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<sup>6</sup> Onomatopoeias and silences are examined in conversational analysis. But in vernacular language they do not have the same meaning as in French. So based an analysis on these elements would not respect the principle of indexicality (Garfinkel, 1984).

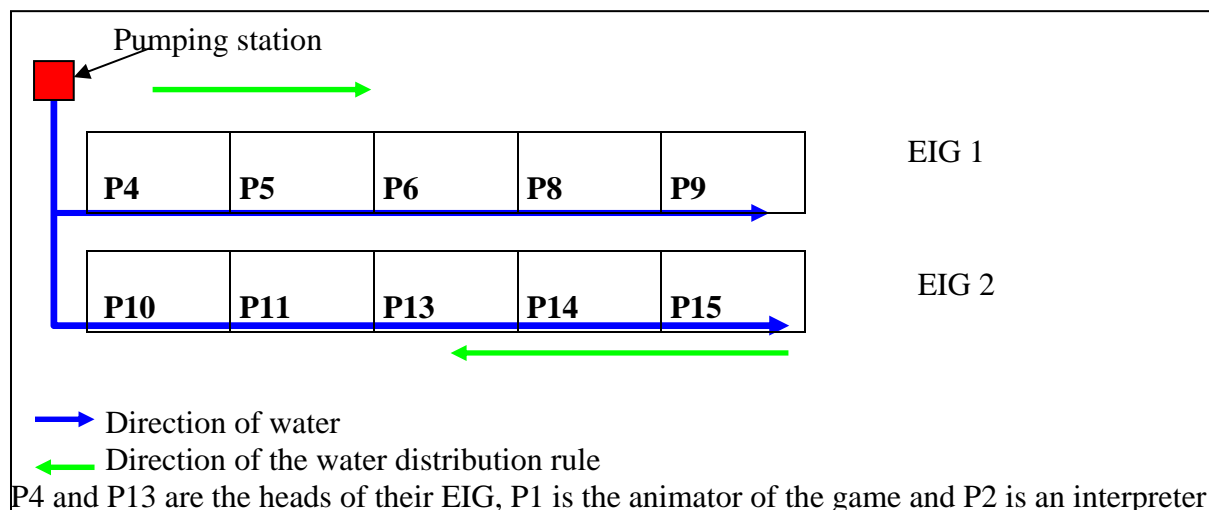
## 2.2. Analysis Of A Crisis In The Game.

We used Goffman to analyze how players justify some of their actions during the game. Then, our goal was to see whether these elements could be put in relation with the principles of the farmers' social system. In order to seize the components which guide their behaviors and their interactions, we focus on dialogues between players involved in a crisis. We assume that in a situation of conflict, players unmask themselves. Thus, the "fronts" and "lines" are easier to grasp than in routine situations. We describe an example taken from one of the sessions we organized in the village. Strong tensions appeared in the second EIG and had to be managed by the whole of players in order to continue the gaming activity for which they have been brought together.

First, we will stabilize the vocabulary employed and position the participational framework of our example. Each "intervention" corresponds to a speaker's speech limited by the speech of another. The "position" of a player takes into account his posture, his attitude, his "front" projected to the other participants (Goffman, 1987). This position evolves regularly during a turn of play what makes changed the attitudes of others speakers. A "conversational sequence" corresponds to a sequence of the game. Distinct from a turn of play, the "conversational sequence" is characterized by a consistent set of themes or interactions. Thus, a turn of play can be composed of several conversational sequences. Thereafter, when the term of "turn" is employed without any precision, it will refer to "turn of play".

In order not to cumbersome our presentation, we only detail the turn when the crisis blew up. The trajectory of the previous events is summarized.

### The germs of the controversy



**Figure 1 :** The irrigated scheme drawn on the blackboard.

At the beginning of the session, the players of the second EIG chose their water distribution rule:

- 1- two plots irrigated simultaneously
- 2- they start irrigation from the downstream to the upstream of the watercourse (figure1).

Following this rule, the plot of P15 and then the ones of P14 were supposed to receive water first. But the abacus (to calculate water flows entering in each plot) implicitly imposes to

respect their rule that only the last one (P15) opens his plot. But in this case some water will be wasted. In another way, if P14 and P15 are simultaneously opened, because of the slope of the irrigation canal, P14 receives 2/3 of the flow and P15 the 1/3 remaining. This 1/3 is not sufficient to sow in the next turn. Without a clear understanding of this difficulty, the rule chosen carries the germs of the controversy. Let us describe now how tensions developed and were managed during the game.

### The trajectory of the crisis

At the beginning of the first turn, P11 tries to change the water distribution rule to start at the upstream. P15 was opposed and recalled the initially selected rule. P13 who is the EIG's head tries first to undervalue the problem and thus to normalize the game progress. The repetition of the opposition between the two principal speakers leads P13 to legitimate P15's opinion. As the turn is going on, P11, P13 and P15 form an under-group whose stake of discussion is materialized by direct contact with the irrigated scheme drawn on the blackboard. After expressing his opinion, P13 uses humor to keep aloof from the arguments. In this turn, P10 stays in the background as if he was not interested by the discussions like the animators P1 and P2 who did not play a part. Therefore, during this first sequence, the controversy was made public. But in the turn 1 the irrigation has not started yet (this turn is used to plough). So the problem is eluded and not really treated by the members of the EIG.

In the second turn, players used to start the irrigation. So the problem can not be deferred any more. This turn of play is marked by an exchange of almost one hundred interventions and can be divided into three conversational sequences.

In the first one, the controversy between P11 and P15 bursts. P15 continues to argue on the register of right by referring to the water distribution rule initially adopted. He assumes the "front" of the **guarantor** of the collective rule. Understanding the stakes of the opposition, P10 (located in the upstream) changes his posture and joins the P11's side. The glances and the speeches are directed to P1, the animator, who becomes a "principal ratified listener". The use of French language by principal speakers to contact directly P1 reveals his new status. But P1 tries to keep his neutrality.

In the second one, P13 endeavors to find a solution to the problem by imitating the decisions taken by the first group. P15 rejects this attempt and tries to win others players over to his opinion by using code switching (from pular to wolof, the mother tongue of P10) or referring to reality. On the other side, P11 keeps on arguing that he just wants to repeat the first campaign water distribution rule. In the same time, he develops confusion in players' mind by trying vainly to corrupt P1. P1 stays in his animator role to recall game rules when necessary in order to turn the conversation onto the game progress and leave "local" problem. P13, legitimated in his head position by P15, takes the final decision in P15. The irrigation will start at the downstream. Here, two different perceptions of the situation of action are revealed which are at the origin of the different postures adopted by the players and their difficulty of adjustment. The problem is temporarily solved.

In the last conversational sequence of the turn, the ambiguity of the water rule distribution appears when players try to apply it. The difficulty is related to the agreement on the number of plots opened in the same time and the priority of the end plot. Dissensions appeared between P13 and P15. P15 has understood that to receive enough water to sow the next turn he must have the lonely plot opened. But P13 thought the rule would be applied with the two last plots irrigated. P13 uses either the results of the first group or reality to justify his

new posture: the group can not waste water. Another element proves the duplicity of P13 who wanted to oust P14 if the initial rule is implemented. In front of the opposition of P14 and P15, P13 changes his mind and adopt conclusively P11 side. The irrigation starts at the upstream. Here two viewpoints of the reality were opposed: for P15, the right must be applied even if it promotes individual behaviours whereas for P13 compromises are necessary.

In the third turn, P15 is not allowed to go to the irrigated scheme area because of the opportunity card he draws. He asks P14 to sow his plot which is supposed being irrigated. But P1 does not accept, because P14 and P15 are not belonging to the same village, so they are not supposed to communicate in the village area.

The trajectory of the crisis points out different players' positions revealed both in verbal and non-verbal interactions. Some change their position in the exchanges from principal to secondary ratified speakers. Their lines are enlightened either by their individual interests in the discussion and their capacity to intervene in the dialogue. P13 gives us an illustration of the evolution of fronts: his line as the EIG head, guarantor of collective interests, explains to others players his change of position in the conflict. Nevertheless, we assist at the end to a break in his line when his hidden individual interest overpasses the posted collective one. To adjust his line with the front revealed he adopts P11 viewpoint.

### The explosion of the conflict

In the fourth turn the conflict bursts. We describe in details parts of conversational sequences in this turn to illustrate how we used Goffman's analysis.

Interventions	Participants	Dialogues
34	P15	No, no! I was there. The second turn, we made the meeting to discuss about water. It was at the second turn, I was there!
35	P1	Yes you were there. But in the second turn the two persons who irrigated were the first ones.
36	P15	No, no, NO! The second turn, we made the meeting to discuss about water. It was at the second turn that we did the meeting. I was present!
37	P1	Ok. But the two first were opened.
38	P15	No, no! We told you to close here and open there!
39	P1	No, the president told me to open the two of the upstream.
40	P11	I sow!
41	P13	Go on ( <i>to P1</i> )! It's like that.
42	P15	No, no! He can't sow! ( <i>Preventing P1 from writing on the board</i> )
43	P13	The campaign started a long time ago!... Go to make trade!
44	P1	Wait, wait, wait! I remind you of the situation: first turn, you made the ploughs; second turn, you talked a lot and at the end P13 asked me to open the two first plots.
45	P15	No, no... We said I had the priority.
46	P1	No, but... I agree with you but I can't do anything. It was P13 who decided it. I'm not here!
47	P13	But you're not the president, you're not in charge of the group!
48	P15	There is a principle!
49	P13	These people have already sowed. You have already sowed so don't be detrimental to them!
50	P11	Let's continues!
51	P15	I said, I said...
52	P13	Go ahead!
53	P15	No! We can not go ahead ( <i>hitting the blackboard</i> ). No! we do not continue!



54	P13	Go to make trade! Go to make trade!
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**Figure 2 :** Dialogues extracted from the fourth turn (first conversational sequence).

In the interval turns, P15 learned the situation of his plot and the opposition of P1. Dice the beginning of the turn, P15 speaking in *pulaar* tries to draw players' attention to his problem. In the group he appears as a **protester** (see the repetition of negatives in I34, 36, 38, 42). All the others keep on playing without listen to him (I41). Not managing to reach his target, he speaks in French to catch P1's attention and considers him as responsible for his situation. He takes the "front" of a **complainant** in the group. He complains about P1 partiality (I38), then about P13's behaviour. In front of his "line", P1 affirms physically (by legitimating his position with the camera or the players' sheets) and verbally his neutrality whereas P13 acts as the EIG head to permit the progress of the campaign (I47, 49). To do so, he plays on different registers of interaction: sometimes as the head he is a sort of mediator listening to the different viewpoints, sometimes to low tensions he laugh at P15 (I43, 54).

Interventions	Participants	Dialogues
55	P15	We are doing a simulation, but there is reality in it!
56	P11	You're talking about principles? But if the principle is to start on the other side... well, we start from the other side.
57	P15	We play a game, but there is reality in this game. Because we were said that we resort to the reality we live here, we were said that we resort to the reality we live here... Do you understand (addressing to P2)? But the reality is that I have the priority, thus I irrigate first.
58	P13	You're right. You have the priority but you refused the agreement. Nobody said that you have not the priority but you refused the agreement.
59	P15	It is obvious!

**Figure 3 :** Dialogues extracted from the fourth turn (second conversational sequence).

In this conversational sequence, seeing that he can not reach his aim, P15 changes his "front" appearing like the **victim** of an injustice because of the lack of serious of others players. To define his new position, he develops a "line" based on the link between play and reality (I55, 57). But his view of reality is not shared by the others players. Therefore, he focuses his attention towards the animators P1 and P2, practising the *code switching* if necessary.

Interventions	Participants	Dialogues
87	P15	That's it!
88	P13	If everybody says that is going to open, the irrigation can not work!
89	P15	If the president his here only for his own interests... The president must work for common interests and not for his owns.
90	P13	Of course I'm here for the interests of the group ( <i>calling others players to witness</i> ). I do not open my pipe and the others have done it ( <i>then translated in wolof to P10</i> ). What I would like was an agreement. He was going to take 40 and me 20, but he refused! I'm going to irrigate. After another mandate, I will leave. The next mandate, if you want you will be able to fire me, but now, I am the president!
91	P11	This plot is full, and this one two, so we open the two next
92	P1	So?... What do I do?
93	P13	I'm irrigating
94	P15	No pipe will be open here! Nobody irrigates! I am going to irrigate, I have the priority!
95	P11	He must do what the president said! Tell him P2!

96	P15	I am the one who must irrigate! If someone wants to take my place, we are going to stay during all the night!
...		
101	P13	It is nearly 6 o'clock! You've already delayed us!
102	P15	Even if it is 10, there's no point!
...		
110	P13	He's alone in his position! We were all agreed to start from the upstream!
111	P15	We were agreed to start from the downstream!
112	P13	When he was leaving his pipe was not opened!
113	P15	If I knew that my plot was not opened, I would not pay to sow
114	P13	Tell to P1 that a farmer before leaving his plot must be sure that it is opened. He can't wait to be back in the village to ask whether his pipe is opened or not! When you open, you must stay and see if your plot is irrigated.
...		
125	P13	You must say to him that if all the persons here are not agree with him. One can not be detrimental to the others.
126	P1	The situation is getting stuck!
127	P13	No it isn't!
128	P1	Yes it is, you can't take a decision
129	P13	Yes I decide! Open this, it's simple!
130	P15	Don't open!
131	P13	Open this!
132	P15	Do not open!
133	P13	P4 ( <i>outside the scene</i> ), come here alone to solve the situation.

**Figure 4 :** Dialogues extracted from the fourth turn (third conversational sequence).

In the last conversational sequence of this turn, P15 sees that the game is progressing without taking into account his opinion. He toughens his position a little more and changes his register of interaction with the players. He adopts first a **troublemaker** “front” disturbing the progress of the game (I94, 96). Several times, he tries to make others players think about their discrepancy but P13 and P11 swept out his attempts. P13 explains his about-turn, first, with the primacy of the group interests over individual ones (I90, 125), second, by the necessity to make progressed the game (I101), and third, by laughing at P15's arguments (I114). His target is no more reached so he stops the game asking for the help of players outside his group. The game can not continue any more. P1 and P2 listening to P15 and P13 organize a committee to solve the crisis.

This example gives us different information about the characters of some players, their interactions, and the way reality is invited in the play. In these extracts we have seen how the audience influences the change of P15's fronts. His line is always the same: application of the legal rule. But because others players do not consider his position, he modifies his fronts becoming more and more toughen till the rupture of the game progress. The analysis of the context of irrigation management is also important to understand that the situation can no more go on. The animator has to listen to players in order to bring them back to their general task. To do so he must know enough the rules of his game to open new space of discussion or negotiation. And the methodology of registration of the interactions and their analysis must be opened to seize the information given in such an unexpected situation.

### **3. ANALYSIS OF THE CONTEXT AND LIFE HISTORIES HIGHLIGHTS THE INTERACTIONS OF PLAYERS.**

This last part of the article is focused on the analysis of one player: P15. This example is not isolated but it illustrates the synergy in our methodology between play and reality. This part aims at showing the position of P15 in real life, his interactions with others stakeholders and his character. We collect information during interviews of focus groups dealing with the difficulties of product in their irrigated system and private life history. These information are then confronted with the fronts of P15 revealed in different game sessions.

#### **3.1. P15 In Real Life**

##### **Collective interactions: his position in a conflict between two NGOs in the village.**

In our analysis of the general context of agriculture in the village, it appears that an old conflict has deeply modified the interactions between farmers. We tried to describe this conflict because P15 had a particular position recognized by some others. And this description may enlighten his line in the game.

During several years, the activities in the village were organized by the main villagers' association *Pinal e Baamtaare*. Villagers used to work together in the field for the heaviest occupations (plough, sow, etc), helping the oldest and developing breeding.

In 1989-90, the German backer, KFW, initiated a project to develop self managed villager banks in the middle valley of the Senegal River. The project was created to help farmers to buy inputs necessary to start the campaign. They would become independent from CNCAS loans. A training program was organized during 18 months, divided in two phases, to reinforce the capacity of farmers. The NGO PIP was in charge of the training program. After the end of the first phase, the trainers' team has left the PIP to create his own NGO: the FSD. Loosing 212 millions of FCFA, the responsible of the PIP went in all the villages to explain the betrayal of the trainers. The populations were urged to refuse to work with the FSD otherwise they would loose the other financial helps given by the PIP (elimination of illiteracy, micro-credit, setting up of seed banks, etc.). The FSD only proposed training sessions.

In the village of Wuro-Madiu, like in other ones of the middle valley, the conflict between the PIP and the FSD cracked the relations between the villagers. The supporters of each NGOs were in confrontation in all the village institutions. The meetings of the association *Pinal e Baamtaare* became theatre of this opposition, and all the decisions were stopped. Until, some supporters of one NGO have refused to go to family ceremonies organized by members of the other camp. This crisis has weakened the cohesion of the social system.

To solve the conflict, several attempts were realized with the help of the head of the village, the sub-prefect, religious dignitary and others willingness persons. Several meeting were organized in which some of this people were mandated to negotiate with the different interest groups. The solution was found when farmers accepted that every one can choose the NGO he wanted to work with.

In this conflict, the major part of the villagers supported the PIP because it gave them a lot of money, for example to help them to organize family ceremonies. The PIP money was quite easily to obtain whereas FSD only proposed training sessions. P15 and few villagers decided to support the FSD because its proposals were long term investments. They were a minority facing the majority, influenced by their older parents to join the PIP. But they kept their opinion. Nowadays, the PIP totally disappeared from the middle valley. The training given by the FSD is still helpful. Some of them continue to eliminate illiteracy, others are in charge of self managed villager bank.

### **P15 characters extracted from his life history.**

To start his life story the questions asked were voluntarily general: “Mr P15, can you tell me who are you? What are the principle events of your life?” So the interview is not directly linked with the game even if the interviews realized were known as being another part of our research program.

P15 is an erudite in Islam who travelled in Mauritania to learn the Koran. Because of health problem he had to come back to the village. He managed the family shop for his older brothers before returning to agriculture occupations. He went to the capital Dakar to practice different jobs during several years. When he came back to the village he became a teacher in pulaar language, a trainer in economic management and a driver of agricultural machines. Now he is in charge of one of the market garden product association of the valley.

In his life history, he appears as someone ready to do difficult jobs to reach his aim. He is decided and ready to stand up for his opinion when he judges it legitimate. He has a critical view on his society. His life history reveals different points:

- the importance of religion in villagers’ everyday life
- his involvement in the development of his village and his country
- the structure of the social system in the village based upon an organisation by class of ages, an organisation where social status are important but not essential and in evolution, a system of decision organized with the oldest members of the three founder families
- the duties to others members of the family and their limits
- the opacity of the management of the irrigated EIG and the difficulties to change the officers of the committee.

With this illustration of individual and collective reality we seized some of the values shared in the social system studied and elements of P15’s *habitus* which guides his interactions with other people.

### **3.2. Comparison Between The Information Given In The Game And In Reality**

The game session we have depicted in the second part gives us information about both collective interactions and individual behaviours in the game. In the third part, we described through the example of P15 data collected in the reality. In this chapter we want to confront

information given in the game and in reality to show how the analysis of the game session brought to us clues to investigate the local social system.

### **Information revealed by the analysis of P15 “fronts” and line**

In the game session presented, P15 appeared as if he was answerable for the water distribution rule initially chosen by the whole group. Feeling invested with this mission, he is able to confront himself with the majority if he thinks he is quite within his rights. This principle explains his “line” of action and the succession of “fronts” – guarantor, protester, complainant, victim of an injustice and troublemaker - developed during the session described. We would like to complete these “fronts” with others he developed in other game sessions. He played in two other sessions and revealed characters to organize people in his EIG or in the game (helping animators of the game), to behave as a spokesman for the others players, to criticize the management of the irrigated system and particularly the individualism of some group presidents in the village.

The sessions have been played before interviewing him. We decided to realize his life-history to understand whether all the fronts he developed in the game sessions were only played or not. But as we already said, his interview was not focused on the game. Our previous presentation of his life history has shown the social values he believes in: religion, social cohesion in the family and in the village, the importance of the right and the development of the community. These principles of life explain partly the positions he adopted in his life and in his relationships with others (as for example during the conflict between the two NGOs).

We see here that for P15, the fronts and line revealed in the game are tightly linked with his characters and behaviours in real life. The Goffman’s discourse analysis of this player has brought to light issues about his character and social relationships of stakeholders in the irrigated system. The questions were investigated then with classical interviews in reality.

### **Others information given by the analysis of others game sessions**

Our methodology was able to reveal how the *habitus* of players interfered in the game. We have shown that in this adult game, there is still a link between play and reality. This conclusion is different from Huizinga (Huizinga, 1951) or Caillois (Caillois, 1967) results. For them, play is outside the reality. It is important to notice that others researchers for example in anthropology (Griaule, 1938) or in psychiatry (Piaget, 1995) have already illustrated this point by showing the link between children games and reality. This issue is more opened in adult games as Mauriras-Bousquet has demonstrated (Mauriras Bousquet M., 1984). Nevertheless, this last chapter is written in order to show that the case presented is not isolated but is a well-illustration of our general research results.

We developed our methodology with different players who assumed different fronts: mediator, shy person, young, senior or manipulator. In general, the majority of fronts revealed by the game was confirmed with life histories and collective interviews analysis. For example the mediator called by players to help them to solve the conflict (P4 above) was in reality a facilitator who intervened in a problem of rural loan application (Daré & Barreteau, 2003).

Various perceptions of the implication of reality in the game tone this conclusion down a bit. For some, the game was regarded as a simulation of reality (P15 above). For others few players, the experiment was just a game with no link with reality and so they test behaviours. During debriefings, some players pointed out this type of characters. In front of their requests, some explained that the way they behave in the game depicted some stakeholders' features. It was a way to discuss about behaviours not accepted by the majority. In this way, the game was enough aside the reality to criticize overtly these behaviours without pointing out the persons embodied. That is not possible in reality because of either the social position of these persons or the social rules. For one player, the game seemed to be a way to justify his position in reality by showing that he is a good farmer with the highest yield of the game.

More than information on individual characters, the game sessions have also revealed to us information about the decision process for the management of their irrigated system. With the example of the crisis in the game, we have seen that to solve a collective problem, they are used to organize committee where the family heads or particular stakeholders (because of their knowledge of the problem dealt) are invited to discuss and proposed solutions to the people in conflict or to the assembly of stakeholders. This way to solve trouble was also used in the conflict initiated by the two NGOs. At last, the problem of loan reimbursement was also confirmed in the game when players decided to make the EIG president managed collectively their individual loans.

#### **4. DISCUSSION: CAN A RPG BE A NEW SOCIAL INVESTIGATION TOOL?**

As a conclusion, it is important to insist on one point: all the behaviours having emerged in the game were not thought before by the game master. Only the interactions between players explained the fronts and lines appeared in the game sessions. The degrees of freedom given by the game and the animators are crucial to make people express behaviours in the game.

Is there a link between game and reality when a role-playing game is used with stakeholders? Give elements of answer to this issue guided the construction of the methodology to analyze behaviours and interactions of stakeholders involved in gaming sessions. Goffman's discourse analysis was used to grasp information in the play activity. His grid was helpful to decode "front" and "lines" of players. The focus on a crisis in a game session has shown the changes of fronts to adapt one's behaviours to the line recognized by others by characterizing the front, the line and the elements of breakdown. But Goffman is not sufficient on his own to test the relevance of our three hypotheses of research. A reflection with the components guiding the interactions of stakeholders in reality was also necessary. We have considered that relationships between villagers is determining by their common values, rules and social roles sharing in everyday life. We know that the *Haalpulaar* system studied is characterized by an social hierarchy. These two elements have oriented the research to a frame given by Bourdieu's sociology of domination. We have analyzed the elements revealing the *habitus* of the farmers. Comparisons with information given thanks to life histories and classical interviews have shown the consistency between "fronts" of players and "fronts" of stakeholders.

Nevertheless, a RPG on its own can not be considered as a social investigation tool. Why? Just because several type of behaviours can appear in a game session, depending on the players' perception of the activity. The researcher must be conscious of that difficulty in order not to conclude too quickly on the truthfulness of the elements collected during the game

session. Comparison with reality is fundamental to use the RPG as an investigation tool. The information given by the game must be replaced in the real system and the explanations of players' behaviours confronted with collective and individual reality. In that way, debriefing of game sessions is essential to the methodology proposed.

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